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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/029,290
Filing Date: December 28, 2001
Appellant(s): YOSHINO, KAZUNORI

Christopher T. Kent
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 22, 2005 appealing from the
Office action mailed February 23, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The art rejection of claims 1, 4, 15 and 16 under 35 U.S.C. § 103 are to be reviewed on Appeal.

GROUND OF REJECTION NOT ON REVIEW

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief. Claims 5, 7, 9, 10, 12-14; and 21 are rejected under 35 U.S.C. § 103 as being unpatentable over Yoshimatsu (5,063,742) in view of Krusche and Yoshimatsu

(5,062,266), as applied to claim 4 and 15, respectively, above, and further in view of Chung and a further teaching of Krusche. Appellant's arguments concerning Chung and a further teaching of Krusche are only directed to the limitations of claims 1, 4, 15 and 16, and therefore, do not appear to be presented for review in the appellant's brief.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,063,742	Yoshimatsu	11/1991
5,062,266	Yoshimatsu	11/1991
4,665,699	Krusche	5/1987

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 4, 15 and 16 are rejected under 35 U.S.C. § 103 as being unpatentable over Yoshimatsu (5,063,742) in view of Krusche and Yoshimatsu (5,062,266). Yoshimatsu (5,063,742) discloses (see also below) a fluid control system and method of operating comprising a pressurized fluid source (1a) supplying pressurized fluid through respective ones of a plurality of spool type flow control valves (81, 82, 83, 2), to a plurality of double acting cylinders (see e.g. column 9 line 39-43) and a plurality of fluid driven motors (a fluid motor can be either rotary (e.g. 3) or linear (e.g. cylinder)); a back pressure element (14)

associated with a motor return line (13) providing fluid communication between the motor and a tank (15) and with a cylinder return line (line connected between 12 and 13) providing fluid communication between the cylinder and the tank, and influencing a fluid back pressure on fluid discharged from the motor and cylinder; a dedicated flow line (connected to 35a, 35b) configured to provide make up fluid (i.e. to prevent cavitation, column 6 line 89) to the motor at a location between the motor and the back pressure element; and a pilot pump (21, shown in fig 1, and schematically connected to pilot valve 24, in e.g. fig 3) provides fluid across a pilot relief valve (23, fig 1) disposed in a second flow line, connected to tank (15); wherein the fluid source provides fluid across a main relief valve (12, e.g. fig 1) in a first flow line, to the motor return line and dedicated flow line, thereby providing makeup fluid to the motor; but does not disclose that the second flow line is connected to the motor return flow line, in parallel to the first flow line; or that the main relief valve is a combination main relief and bypass valve.

Krusche teaches, for a fluid control system and method of operating comprising a pressurized fluid source (e.g. 3, fig 2) supplying pressurized fluid to a fluid driven motor (e.g. 48, fig 5; 109, fig 10); a motor return line (102, fig 1 & 3; e.g. column 5 line 37-39), between the motor and a tank; a pilot pump (25, fig 2) provides fluid across a pilot relief valve (e.g. 196, fig 3) disposed in a second flow line (194, 200), connected to the tank; that the second flow line is connected to the motor return flow line (see fig 3).

Since the connection between the pilot relief valve and the tank of Yoshimatsu (5,063,742) and Krusche are functionally equivalent; it would have been obvious at the time the invention was made to one having ordinary skill in the art to connect the

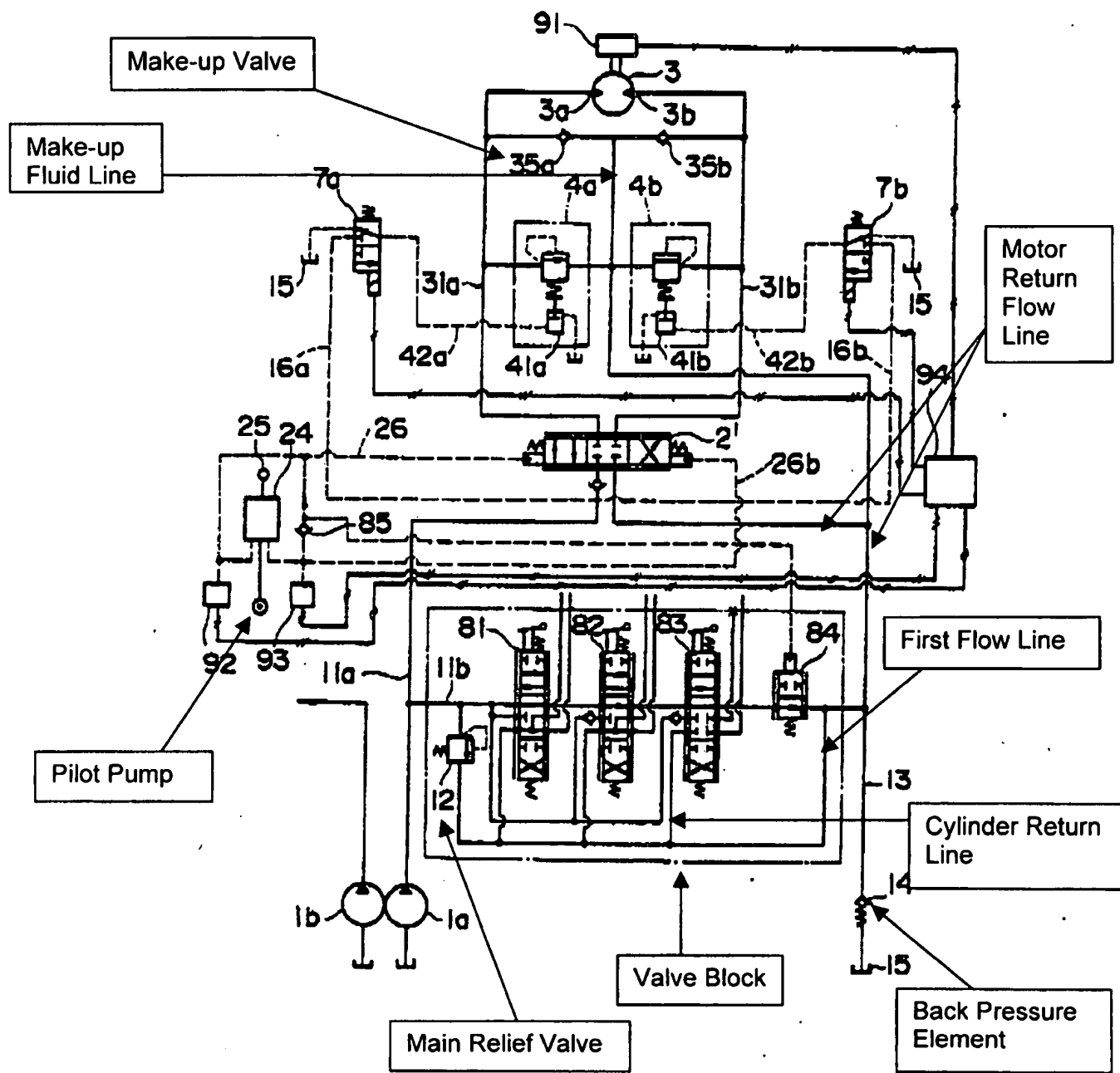
second flow line of Yoshimatsu (5,063,742) to the motor return flow line, as taught by Krusche, as a matter of engineering expediency. It is understood that the second flow line is connected to the motor return flow line between the main relief valve and the tank, but that this would still make the second flow line in parallel with the first flow line.

Yoshimatsu (5,062,266) teaches, for a fluid control system and method of operating comprising a pressurized fluid source (1) supplying pressurized fluid to a fluid driven motor (6); a back pressure element (72) disposed between the motor and a tank (7), and influencing a fluid back pressure on fluid discharged from the motor; wherein the motor is connected to the tank by a motor return flow line (71); a dedicated flow line (connected to 47, 48) configured to provide make up fluid (i.e. to prevent cavitation, column 7 line 15-17) to the motor at a location between the motor and the back pressure element; wherein the fluid source provides fluid across a main relief valve (17) to the motor return flow line and dedicated flow line; that the main relief valve is a combination main relief and bypass valve (17, in combination with 18), for the purpose of unloading the pressure source, when not needed to provide pressurized fluid (e.g. column 4 line 2-8).

Since Yoshimatsu (5,063,742) and Yoshimatsu (5,062,266) are both from the same field of endeavor, the purpose disclosed by Yoshimatsu (5,062,266) would have been recognized in the pertinent art of Yoshimatsu (5,063,742). It would have been obvious at the time the invention was made to one having ordinary skill in the art to make the main relief valve of Yoshimatsu (5,063,742) a combination main relief and bypass valve, as taught by Yoshimatsu (5,062,266), for the purpose of unloading the pressure source, when not needed to provide pressurized fluid.

FIG. 5

Yoshimatsu (5,063,742)



(10) Response to Argument

1 Argument relating to the combination of Yoshimatsu (5,063,742) and Krusche.

Applicant's argues that there is no motivation to combine Yoshimatsu (5,063,742) and Krusche, since there is nothing in the cited references or anywhere else to support the assertion that the connection between the pilot relief valve and the tank of Yoshimatsu (5,063,742) and Krusche is functionally equivalent.

Since the pilot pumps of Yoshimatsu (5,063,742) and Krusche perform the same function of supplying pilot pressure to pilot valves for directional control valves, and the pressure relief valves of Yoshimatsu (5,063,742) and Krusche both perform the same function of limiting the pilot pressure to be less than a certain value; the statement of functional equivalence is correct and the rejection is proper.

The system of Yoshimatsu (5,063,742) shows the main relief valve (12) and a number of other valves (81, 82, 83, 84) all in a valve block (shown by a rectangle drawn around them) and other valves (2', 4a, 4b, 35a, 35b, 24, in fig 3 and 5; pilot relief valve 23, in fig 1). The location of the valve block and valves depends on the machine they are installed in. In some machines, the pilot pressure relief valve (23, fig 1) may be close to the tank, so the second flow line is run directly to the tank. In other machines, the pilot pressure relief valve may be far from the tank and close to a control valve (e.g. 2') or close to the valve block. In this case, instead of running two lines to the tank, one from the second flow line and the other from the motor return line, it is simpler to run one line to the tank, after joining the second flow line with the motor return line. This is what

Krusche is showing. Although a person of ordinary skill in the hydraulic circuit art is highly skilled, understanding how a variety of hydraulic elements interact; the motivation for connecting the second flow line to the motor return line of Yoshimatsu (5,063,742) is relatively simple.

The examiner interprets the limitations of the second flow line connected to the motor return line very broadly. Appellant's drawings show the second return line (172) connected to the motor return line (196) before the back pressure element (160). Although the back pressure element is claimed as being associated with the motor return line (claim 4), the second return line is not claimed as being connected before or after the back pressure element. The closest is in claim 1 which claims "at least one of the first and second flow lines is configured to provide make-up fluid to the motor" (last 2 lines), although there is no limitation relating the make-up fluid to the back pressure element.

2 Argument relating to the combination of Yoshimatsu (5,063,742) and Yoshimatsu (5,062,266).

Appellant argues that since Yoshimatsu (5,063,742) is a purely mechanical system and Yoshimatsu (5,062,266) has an electronic control system, the principle of operation of Yoshimatsu's (5,063,742) system would have to be changed from a purely mechanical control to electronic control, if modified by Yoshimatsu (5,062,266). Since

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the combination of Yoshimatsu (5,063,742) and Yoshimatsu (5,062,266) would change the principle of operation, there is no motivation to make the combination.

Yoshimatsu (5,063,742) actually points to a system with electronic control, by showing another embodiment (e.g. fig 5), identical to the purely mechanical system of fig 3, except that it also has electronic control of certain functions. Therefore, there is motivation to combine Yoshimatsu (5,063,742) and Yoshimatsu (5,062,266).

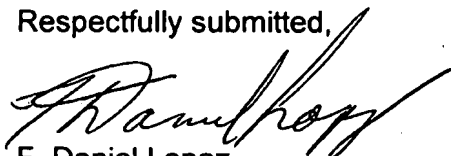
Alternately, Yoshimatsu (5,062,266) can be combined with the fig 5 embodiment of Yoshimatsu (5,063,742), which is not a purely mechanical system. Since there would be no change in principle, there would be motivation to combine Yoshimatsu (5,063,742) and Yoshimatsu (5,062,266).

(11) Related Proceeding(s) Appendix

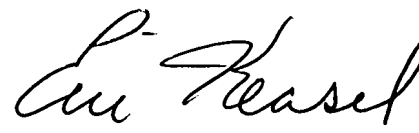
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


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